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Histochem Cell Biol 2000 Aug;114(2):137-46

J Immunol Methods 1981;46(1):63-8

Hua Xi Yi Ke Da Xue Xue Bao. 1990 Sep;21(3):263-6. Chinese.

J Immunol Methods. 1984 Sep 4;72(2):421-6.

J Immunol Methods. 1993 Aug 26;164(1):141-2. No abstract available.

Thanks,
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Journal of Immunological Methods, 164 (1993) 141–142

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Letter to the editors

On the purification of IgG from egg yolk

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Dear Editors,

It is now accepted by many research workers and commercial companies that yolk from eggs laid by immunized chickens constitutes an excellent and plentiful source of antibody, with one egg containing as much antibody as an average bleed from a rabbit. Originally, this was realized independently by two groups in the late 1970s, and several methods for the purification of yolk IgG were published within a few months (Polson et al., 1980; Jensenius et al., 1981). The main problem with purification of IgG from yolk compared with serum is the large amount of lipid present, which prevents the use of standard precipitation techniques. Akita and Nakai (1993) in a recent paper published in the Journal of Immunological Methods compared various published methods for the purification of IgG from yolk. They reported that their new method (Akita and Nakai, 1992) involving euglobulin precipitation of the lipids (through dilution with 9 vols. of water) gave the highest yield, followed by methods in which the lipids were removed by dextran sulphate precipitation (Jensenius et al., 1981) or the use of xanthan gum (Hatta et al., 1988).

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For the record we thought it appropriate to note that Jensenius et al. (1981) described, not one, but two methods, the first involving the precipitation of the lipids with dextran sulphate and the second by euglobulin precipitation through dilution with 9 vols. of water. The only difference between our procedure and the one now described by Akita and Nakai appears to be that the latter authors incubate the yolk-water mixture for 6 h followed by centrifugation at $10{,}000 \times g$, whereas we recommended freezing and thawing of the mixture. Freeze-thawing results in the formation of lipid aggregates large enough to be removed by conventional low speed centrifugation at $2000 \times g$. Since chickens are rather prolific egg layers one often ends up handling quite large volumes and it is thus convenient to be able to use ordinary large capacity centrifuges.

It is most appropriate to publish careful comparisons of published procedures and it is gratifying to see a comprehensive investigation of chicken IgG purification in which one of our procedures is included. Most authors of new chicken IgG purification procedures have focussed on comparisons with the PEG precipitation procedure which Akita and Nakai found to give the lowest recovery.

Akita and Nakai recommend the euglobulin precipitation method over the dextran sulphate method since, as we wrote, one may have t repeat the dextran sulphate precipitation if all of

the lipids are not precipitated in the first round. However, this is hardly a relevant objection; it is merely a reflection of the fact that our generation of researchers have become accustomed to place a rather high value on saving chemicals. The amount of dextran sulphate we recommended was close enough to the minimum requirement to be insufficient in some cases but the problem can be readily overcome by increasing the amount of dextran sulphate used initially.

May we take the opportunity of the somewhat informal nature of the present type of communication to emphasize the importance of seeking out the original publications, even when apparently detailed descriptions of procedures, results, etc., are given in newer references. Our dextran sulphate procedure is carefully described in a popular laboratory handbook (Johnstone and Thorpe, 1987) which does not, however, include our euglobulin precipitation version.

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